July 14, 1942. W. E. MALLORY ET AL 2,289,881

THERAPEUTIC TREATMENT APPARATUS

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Fig. 1.

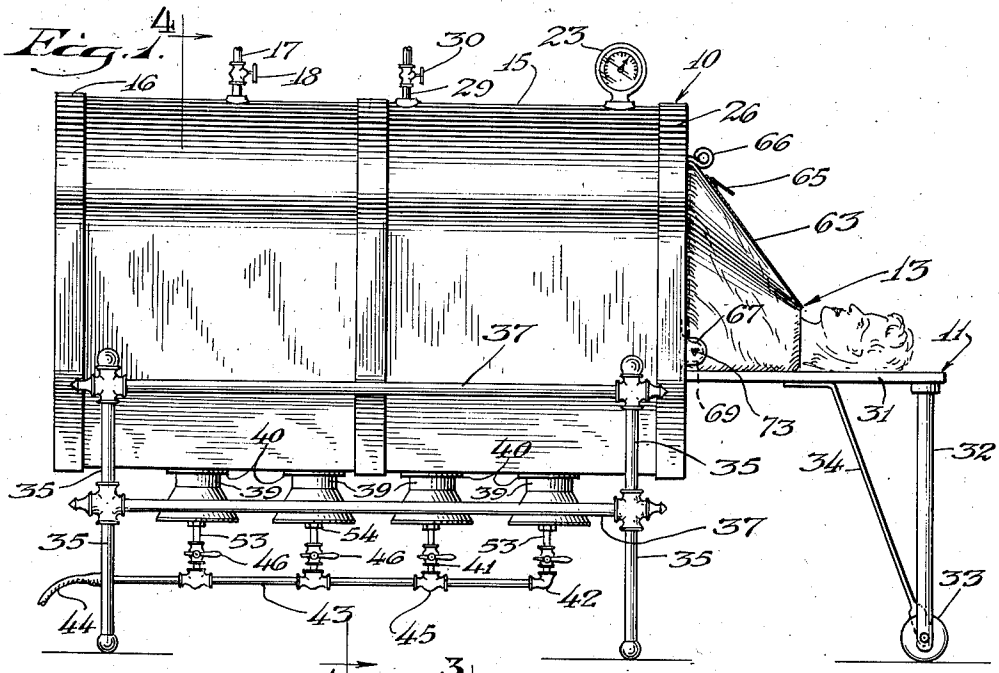
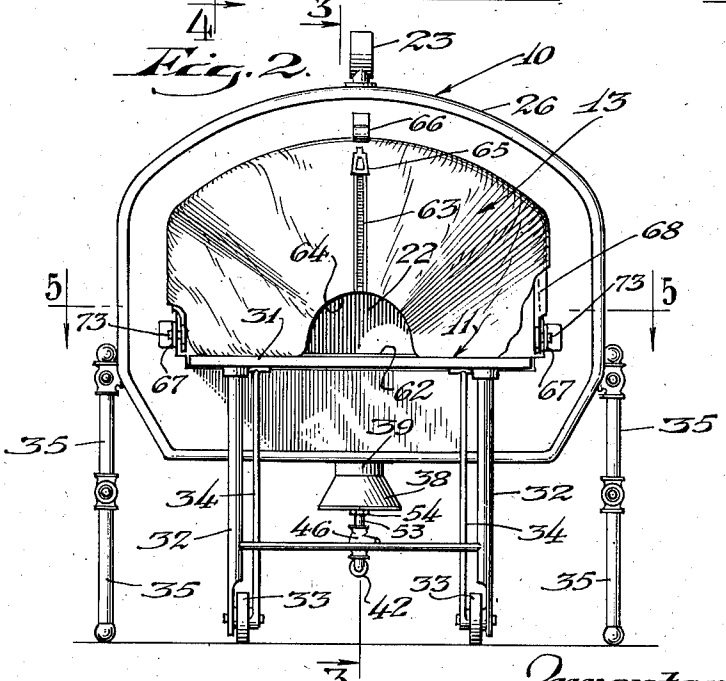


Fig. 2.



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Fig. 3.

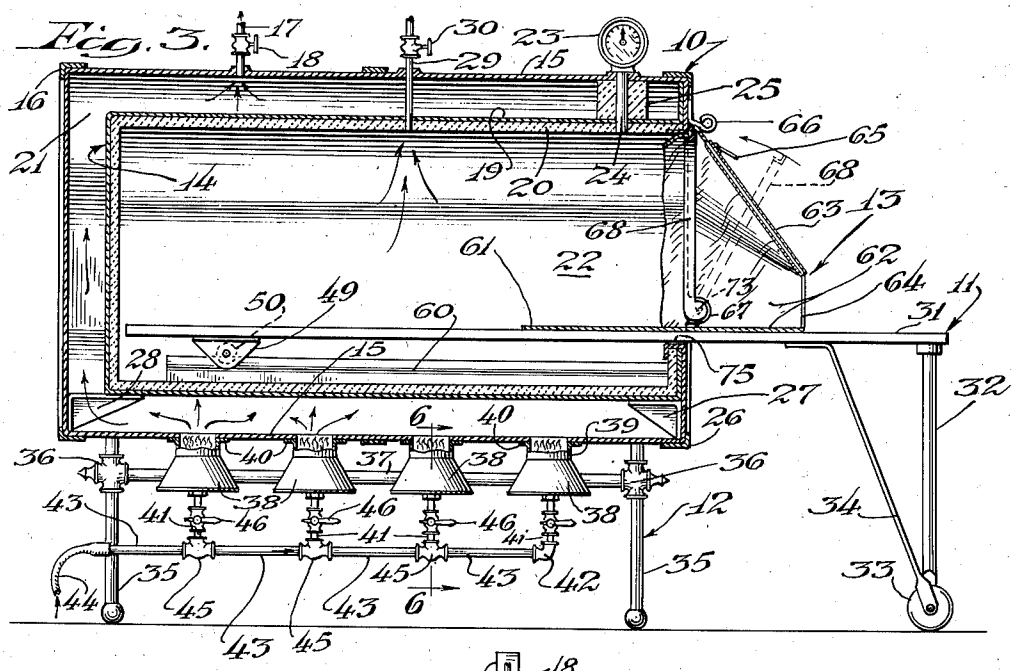
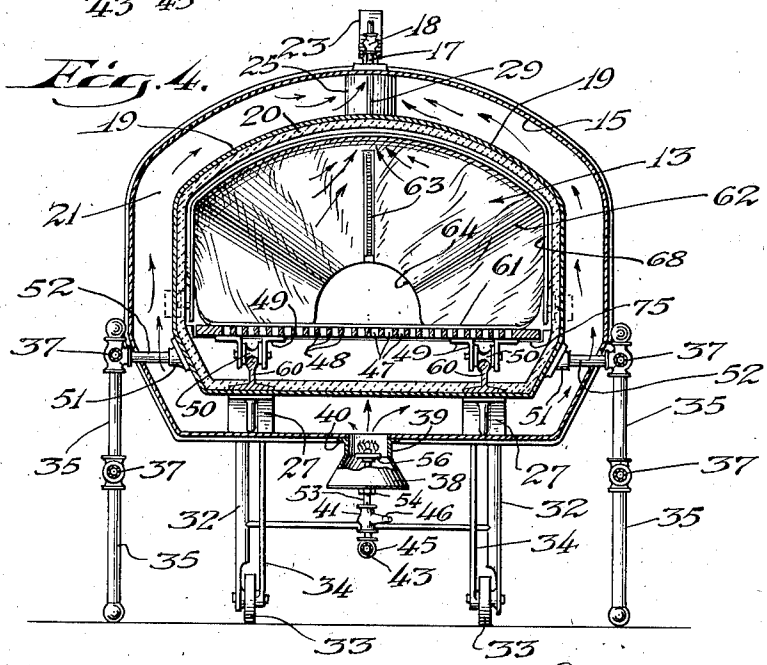


Fig. 4.



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THERAPEUTIC TREATMENT APPARATUS

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Fig. 5.

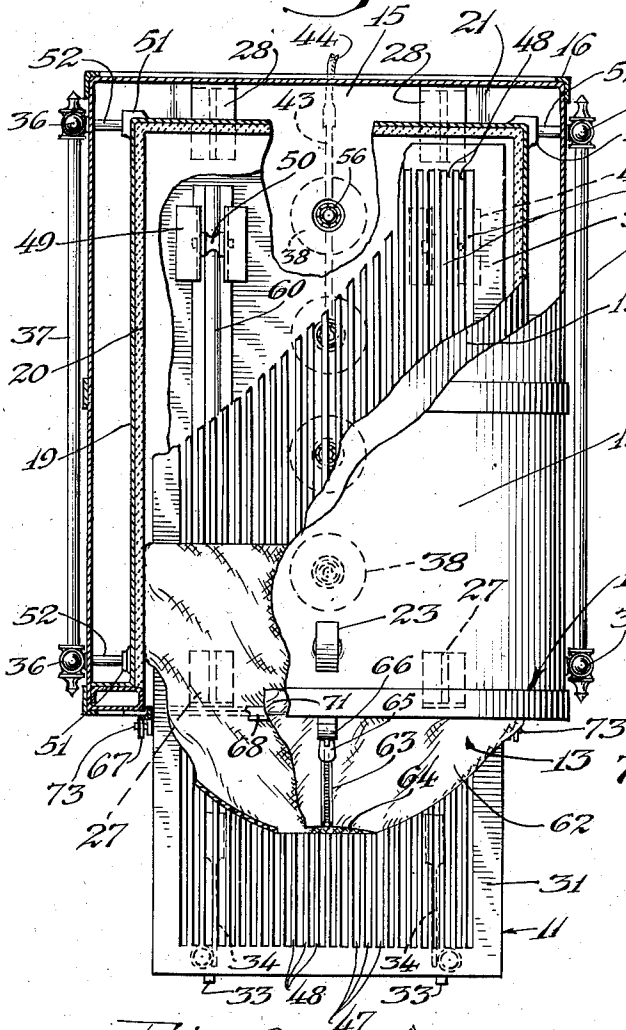


Fig. 7.

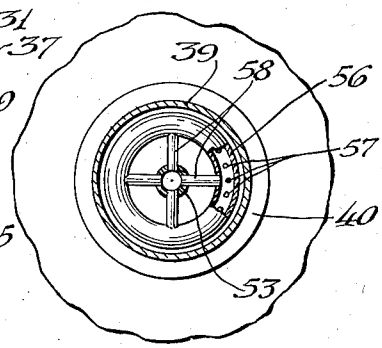


Fig. 6.

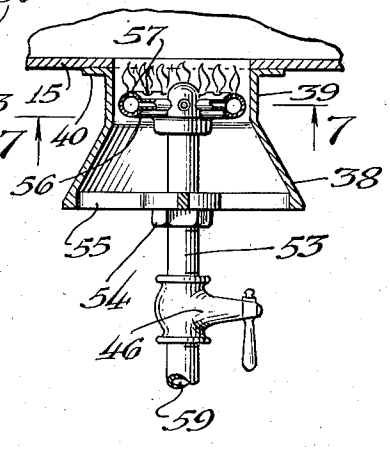


Fig. 8.

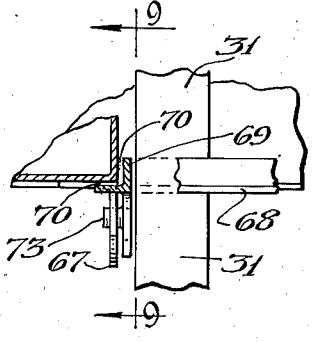
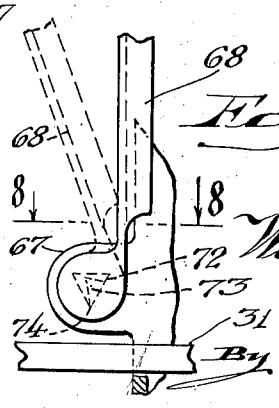


Fig. 9.



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UNITED STATES PATENT OFFICE

2,289,881

THERAPEUTIC TREATMENT APPARATUS

William E. Mallory and Rose Mallory,
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Application June 21, 1941, Serial No. 399,128

1 Claim. (Cl. 128—373)

Our invention relates to thermo-therapeutic apparatus or devices which employ, especially, dry heat as an agency for the beneficial treatment of the human body for the relief and cure of ailments to which it is subjected.

One object of our invention is to provide a primary heating chamber and a secondary heating chamber secured within the said primary heating chamber in which the patient to be treated is positioned. A suitable mobile support and conveying means is provided for patients to recline upon, the same being adapted to be positioned within and out of the said secondary or inner chamber.

Another object of our invention is to provide an interchangeable curtain for sealing the opening after the patient has been placed in the said secondary chamber, and one that is possessed of novel means of construction which can be positioned and removed from the device quickly and readily.

Other objects and advantages resident in our invention will become apparent as the description progresses and brings to light the various elements of construction, as well as the use and operation of our invention; like numerals will be used to designate like parts in the various figures of the drawings in which:

Fig. 1 represents a front elevation of our invention showing a patient positioned therein ready to receive the necessary therapeutic treatment.

Fig. 2 is a right end elevation of the view shown in Figure 1.

Fig. 3 is a longitudinal cross-sectional view on the line 3—3 of Figure 2.

Fig. 4 is a longitudinal cross-sectional view on the line 4—4 of Figure 1.

Fig. 5 is a top view of the view shown in Fig. 1, with parts broken away to depict more clearly the structure of the apparatus.

Fig. 6 is a longitudinal cross-sectional view on the line 6—6 of Figure 3.

Fig. 7 is a transversal cross-sectional view on the line 7—7 of Figure 6.

Fig. 8 is a transversal cross-sectional view on the line 8—8 of Figure 9, showing the construction of the apron clamping means depicted in Fig. 1 and Fig. 3.

Fig. 9 is a longitudinal cross-sectional view on the line 9—9 of Figure 8.

Figures 6, 7, 8 and 9 are enlarged fragmentary sectional views in order to depict in detail the construction of the various elements represented thereby.

Referring to the drawings, Figures 1, 2, 3 and 4 show the general construction of our invention. In Figure 1, it is clearly shown how a patient is positioned within our therapeutic machine in order to receive a treatment. It can be seen that the general construction is as follows:

The invention is comprised of an outer casing generally designated 10, and an inner casing generally designated 14, a moving cot support generally designated 11, a suitable base generally designated 12, and a curtain for sealing the opening of the chamber 22 when a patient is placed therein generally designated 13.

Referring more particularly to Figures 3 and 4, the elemental details of construction are clearly depicted. The outer casing generally designated 10 is comprised of a body section 15 shaped approximately as indicated in Figures 2 and 4, and to which are secured the rear section 16, and the front section 26 which is open. The bottom section 16 is closed, whereas the front section has an opening 75 approximately following the contour of the inner casing generally designated 14.

The inner casing is preferably made of a single sheet of metal 19 made large enough to accommodate the entire body of a person, and is lined thruout with an insulating material such as asbestos designated 20. The cavity or chamber 22 within this casing is the space wherein the resultant heat is confined which acts on the patient's body or that portion of the patient's body inserted in position within this chamber.

The outer casing 10 secures the inner casing 14 and supports the same by virtue of brackets 27 and 28. The entire structure may be riveted, bolted or preferably welded in order to give hermetical sealing thruout for the chamber 21, and to prevent the heat from escaping from the confines of the chamber or opening 21 which is confined between the members 10 and 14.

The chamber 22 has connected thereto an exhaust pipe 29 which has secured thereto a valve 30 and which may be directed out of the room thru any of its walls so as to permit the perspiration odors to be exhausted therethru. The valve is kept closed whenever it is desired to increase or to bring up the temperature within the chamber 22. The member 10 has secured thereto suitable piping 17 connected to a valve 18 which is an exhaust for the products of combustion to be drawn off thru this arrangement and caused to be expelled therethru to points outside of the building thru similarly suitable wall connections.

The members 10 and 14 are secured together rigidly by welding as heretofore mentioned, and the entire combined assembly is supported on a suitable stand such as is suggestively shown in Figures 3 and 4. The stand or base support designated 12 is, preferably, made of piping and is made up of a number of sections 35 secured to suitable T's 36 and interconnected to horizontal reinforcement piping members 37 so as to make a rigid structure. The piping 52 is secured to the T's 36 and in turn secured to flanges 51 which are welded to the outer portion of the inner casing 14.

The method of heating is, preferably, by gas. A suitable flexible tube 44 makes connection to a source of supply, being further connected to piping 43 and by virtue of T's 45 to which are secured the valves 41. The valves 41 in turn are secured to the burner structures 38 which are preferably of a tapered shape having a reduced neck 39 provided with flanges 40 which are welded to the outer casing, generally designated 10. The valves 41 may be of any standard type such as that indicated in the drawing having a valve control 46. An elbow 42 is used, preferably, to connect the last burner in the series.

Within the chamber 22, we provide rails 60 of suitable structure which accommodate the rollers 50 secured within the brackets 49 which in turn are attached to the supporting mobile platform 31 so as to support the said platform within the chamber and to permit it to slide freely in and out of the chamber. The outer portion of the platform 31 is secured to suitable legs made of piping and designated 32 which in turn are secured to suitable rollers 33 being firmly held in place by the cross braces 34 secured to the platform 31 and to the axes of the rollers 33. Thus, it can be seen that the supporting platform generally designated 11 is free to be moved into and out of the chamber. The platform is moved out when it is desired to prepare it to receive a patient. The patient is placed thereon and then the platform is pushed inwardly as far as it will go or as far as it is desired to treat the anatomy of the body of a patient.

The opening 75 is to be closed in some suitable manner when a patient is positioned therein, and for this purpose we provide a novel arrangement made of disposable textile material generally designated 13 and which is comprised of a back fitting section 61 which fits under the back portion of a patient, and is further provided with a collar portion 64 connected to a slide fastener structure 63 which is provided with a pull tab 65. The apron or curtain element 13 is generally shaped as shown at 63 and is provided with a portion 71, which is held between the member 68 and the opening 75 brought into clamping engagement with the rim of the opening 75. It can be seen by reference to Figures 8 and 9 that the member 68 is of an angular structure in transverse cross-section as designated and shown in Figure 9 so as to fit the recess or the front opening of the inner chamber 22 of the inner casing 14.

The space 70 between the member 68 and the opening 75 is the space within which the endless section 71 of the apron 13 is placed and clamped, after which the fastener element 65 is moved downwardly until it reaches the neck of the patient being treated. Prior to that, the patient's neck may be enveloped in a towel so that the metallic portion of the fastener element will not contact the neck, especially, when it becomes very hot due to the heat which is induced into the chamber 22 of the inner casing.

The platform member 31 is preferably made with a series of openings 47, leaving resultant slat structures 48 so that the underneath portion of the patient's body may be heat treated as well as the upper portion of the body; in other words, an even heat is produced to simultaneously act on all parts of the body that are positioned within the treating chamber 22. The heat in the chamber 22 is a resultant heat, and is more or less a uniform heat in all portions of that chamber primarily for the reason that it is heat which is transmitted to this chamber by conduction from the main heating chamber 21 which receives the heat from the gas jets positioned at the btotom of the apparatus. This causes the heat waves to rise upwardly and reverberate within the area 21 covering it fully and entirely and thus causing the inner chamber to acquire a uniform and gradually increasing temperature.

The thermometer 23 is positioned outside of the outer casing generally designated 10, and is provided with a long stem 24 to reach into the inner chamber 22 so as to register the temperature therein which is the effective temperature to which the body of the patient is being subjected. We provide heavy insulation 25 in order that the thermometer 23 will not register the heat in the primary chamber 21, but the resultant heat which exists in the secondary chamber 22.

In Figures 6 and 7 we elaborate more distinctly in showing the nature of the burner element structure which is provided with piping 53 connected to the valve 46 and provided with the conduit or opening 59 generally communicating with the feed tube leading from the gas supply. The tubing 53 is preferably secured to the funnel shaped member 38 which has the webbing 55, and a central portion for threading thereto the pipe 53, secured by the lock-nut 54, and which surround the webbed burner structure 56, having the hollow spokes 58, and the small flame jet openings 57 where the gas is ignited and produces the necessary heat. The valve control 46 may be manipulated so as to regulate the size of the flame and in turn increase or decrease the temperature which is to be induced in the device for ultimate treatment of the patient.

Figures 8 and 9 show more elaborately in an enlarged fragmentary section the structure of the member 68 with respect to its sealing the opening 75 by virtue of the apron structure 13 inserted therethru, and clamped therebetween using an element 66 to effect the final clamping action. The outer casing is, preferably, provided with bearing lugs 67 with triangular openings 72 and the member 68 has triangular trunnions or extensions 73 pivoted at the apex of the triangular sections respectively as at 74. This permits the member 68 to be closed firmly and it being made to fit rather tightly and clamping the apron 13 therebetween the closure will form a fairly good seal all around, whereas one of the lateral sides of the triangular openings 72 will permit the triangular trunnion 73 to rest one of its sides thereagainst when opened as shown in dotted position in Figure 9, thus positioning the member 68 either in a closed relationship when engaged by a spring snap latch 66 or in an open position as shown by the dotted line Figure 3. This limited movement of the member 68 will permit wheeling the patient in and out of the

chamber 22 without the said element 68 being a source of interference or inconvenience, to the movement in or out of the cabinet of a patient's prone body to be positioned therein or removed therefrom.

In preparing a patient for treatment with the use of our invention, the following is done: The patient first will don the apron member 13 with the fastener element open so as to provide the greatest possible neck and head opening by placing his head thru the neck opening 64 allowing the back fitting section 61 to hang down over the back of the patient, the fastener member 63 being positioned in front of the patient. With this apron put on as explained, the patient will be caused to lie down on the cot 11 which prior to his positioning thereupon will be moved outwardly to its maximum outward position so that the patient will have no difficulty in positioning himself thereon. The back fitting portion 61 of the apron 13 will thus be positioned under the back of the patient, whereas the upper portion 62 will envelop the part of the patient's body not in the apparatus, and will be held securely against the platform 31, then the patient will be wheeled all the way into the chamber, and the apron or the endless skirt portion 71 of the apron 13 will be secured between the member 68 and the flanged opening 75 of the inner casing thus making a substantially complete seal for the inner heating chamber.

The heat which will be generated in the primary chamber 21 will cause heat to be transmitted to the chamber 22 which will subject the patient to the therapeutic treatment desired. The temperature may be brought up to as high a point as the patient can withstand causing the patient to perspire profusely, thus giving the patient beneficial treatment.

We wish to mention at this time that the dry method that we utilize enables the patient to be subjected to greater temperature than a patient could bear with moist heat such as steam cabinets or other similar apparatus. The patient feels freer, feels more comfortable, and generally, treatment in our apparatus is by far preferable to the average treatment received in steam cabinets and apparatus of that type.

After the patient has had sufficient treatment, the element 68 is sprung open thus releasing the portion of the apron that is gripped therebetween. This permits the patient to be free for removal from the inner chamber 22 and the mobile platform 11 is caused to be moved in a direction exposing the entire body of the patient and permitting him to leave the platform 31. The fastener element is opened and the apron member 13 removed from the patient. The patient may then be subjected to a bath treatment in order to remove any body odors and perspiration that may cling to the body as a result of the treatment.

The exhaust valves 30 and 18 may be operated in order to remove such by-products of combustion which result, and also the perspiration odors from the inner chamber 22 which may be sprayed with a hose in order to remove therefrom any perspiration which has been transformed into moisture covering the wall of the insulation thus rendering the apparatus sanitary and clean for receiving the next patient.

The apron 13 is of course disposable, and a new apron would be used for each individual patient. The procedure is rather simple, quick, and it does not take long to place a patient within the treating chamber, and yet requires very little attention, the thermometer giving the proper indication of the heat or temperature which exists within the confines of the chamber 22.

Altho, we have described rather succinctly in detail the nature, structure, and operation of our invention, and while we have shown a preferred form of construction, yet we feel it is susceptible of many modifications, alterations, and improvements, therefore we reserve the right to all such modifications, alterations, and improvements which come within the purview of the foregoing description and within the scope and spirit of the invention as depicted in the drawings; our invention to be limited only by the subjoined claim.

Having thus described and revealed our invention what we claim as new and desire to secure by Letters Patent is:

A therapeutic apparatus comprising, a cabinet structure, made up of two casing members secured in annular relationship, providing an opening at one end of said cabinet, cabinet supporting means adapted to maintain the said cabinet structure a predetermined distance from the floor of a room, heating means secured to the base of said cabinet structure, mobile support means adapted to support a prone body thereupon, and further adapted to travel in and out of said cabinet, and apron clamping means comprising, triangular bearing means straddling the opening in said cabinet, substantially semi-circular clamp means provided with triangular trunnion means, the said trunnion means being of smaller dimension than the said bearing means thus affording limited movement to the said clamp means, and hasp means secured to the said cabinet adapted to hold releasably the said clamp means.

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